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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/532,967

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EXAMINER

PRENTY, MARK V

ART UNIT

PAPER NUMBER

2822

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/532,967	Applicant(s) TANABE, TAKAHISA	
	Examiner MARK PRENTY	Art Unit 2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☒ Claim(s) 6 and 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>April 27, 2005</u> . | 6) <input type="checkbox"/> Other: _____ |

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This Office Action is in response to the papers filed on April 27, 2005.

Claim 6 is objected to because "martial" (line 6) should read "material."

Claim 7 is objected to because "martial" (line 2) should read "material."

Claims 5-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 is indefinite in reciting, "the wiring line being made of the same material used for the source electrode or the drain electrode," because claim 5 previously recites two different source electrodes and two different drain electrodes. Claim 8 depends on claim 5 and is thus similarly indefinite.

Claim 6 is indefinite in reciting, "the wiring line being made of a [material] other than the same material used for the source electrode or the drain electrode," because claim 6 previously recites two different source electrodes and two different drain electrodes. Claims 7 and 8 depend on claim 6 and are thus similarly indefinite.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent 6,284,562 to Bartlogg et al. (Bartlogg, cited in the Information Disclosure Statement (IDS) filed on April 27, 2005) together with United States Patent 5,801,398 to Hebiguchi (cited in the IDS filed on April 27, 2005).

As to independent claim 1, Bartlogg discloses an organic semiconductor device (see the entire patent, including the Fig. 24 disclosure) comprising: at least p-type and n-type channel organic semiconductor elements each including a pair of a source electrode and a drain electrode which are facing each other, an organic semiconductor

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layer deposited between the source and the drain electrode such that a channel can be formed therebetween, and a gate electrode which applies a voltage through a gate insulating layer to the organic semiconductor layer provided between the source electrode and the drain electrode.

The difference between claim 1 and Bartlogg is claim 1 recites, "wherein the source electrode and the drain electrode of the p-type channel organic semiconductor are made of materials having values of work function higher than those of the source electrode and the drain electrode of the n-type channel organic semiconductor respectively."

Hebiguchi teaches it is advantageous to make the source and drain electrodes of a CMOS's p-type channel semiconductor of materials having values of work function higher than those of the source and drain electrodes of the CMOS's n-type channel semiconductor (see the entire patent, including column 4, lines 1-15, for example).

It would have been obvious to one skilled in the art to make the source and drain electrodes of Bartlogg's p-type channel organic semiconductor of materials having values of work function higher than those of the source and drain electrodes of Bartlogg's n-type channel organic semiconductor, because Hebiguchi teaches it is advantageous to make the source and drain electrodes of a CMOS's p-type channel semiconductor of materials having values of work function higher than those of the source and drain electrodes of the CMOS's n-type channel semiconductor.

Claim 1 is thus rejected under 35 U.S.C. 103(a) as being unpatentable over Bartlogg together with Hebiguchi.

As to dependent claim 2, the (ambipolar) organic semiconductor layers of Bartlogg's p-type and n-type channel organic semiconductor elements are made of p-type and n-type organic semiconductors respectively.

Claim 2 is thus rejected under 35 U.S.C. 103(a) as being unpatentable over Bartlogg together with Hebiguchi.

As to dependent claim 3, the source and drain electrodes of the Bartlogg/Hebiguchi device's p-type channel organic semiconductor element have values equal or close to an electron affinity of the p-type organic semiconductor layer.

Claim 3 is thus rejected under 35 U.S.C. 103(a) as being unpatentable over Bartlogg together with Hebiguchi.

As to dependent claim 4, the source and drain electrodes of the Bartlogg/Hebiguchi device's n-type channel organic semiconductor element have values equal or close to an ionization potential of the n-type organic semiconductor layer.

Claim 4 is thus rejected under 35 U.S.C. 103(a) as being unpatentable over Bartlogg together with Hebiguchi.

United States Patent Application Publication 2006/0197084 is related to this application.

Registered practitioners can telephone the examiner at (571) 272-1843. Any voicemail message left for the examiner must include the name and registration number of the registered practitioner calling, and the Application/Control (Serial) Number. Technology Center 2800's general telephone number is (571) 272-2800.

Mark Prentz
Mark V. Prentz
Primary Examiner